Lesson 15 - The Roles Of Rest And Sleep In Supplying Body Needs

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1. Introduction

Rest and sleep are two essentials of life that have an importance unrecognized by most people. Sleep and rest are indulged because the need for them overtakes rather than because of an enlightened awareness of their role in well-being.

This lesson endeavors to teach the physiological bases for rest and sleep. Their significance can then be better appreciated.

Sleep is an infant science in that it has not been long studied. The 50 to 100 sleep researchers in this country think of themselves as pioneers, and in a sense they truly are. Also, they are medically oriented, as are most people, unfortunately. Now, about 30 years after sleep research began, sleep researchers have uncovered relatively little knowledge of what sleep is about. However, they do occasionally unearth a gem or two of useful knowledge.

The restorative roles of rest and sleep are everywhere admitted, but the physiological mechanisms are not clearly understood by researchers. Hopefully this lesson can prove not only enlightening but also furnish you guidance you can turn to benefit for yourself and your clients.

2. What Is Rest?

Rest is a period of inactivity during which the faculties can restore expended nerve energy. When we create wastes faster than our body can eliminate them and deplete our energies faster than our faculties can restore them, a period of inactivity enables the body to catch up on its homework. Physical and mental inactivity can be called rest.

There are many different kinds of rest. Some are:

1. *Physiological rest*, during which the body and most of its faculties are inactive, as in sleep and in fasting.
2. *Sensory rest*, during which time the nervous system and brain are relaxed or not normally exerted, as in fasting, sleep and meditation. The eyes are closed in sleep and meditation, which curtails a great drain of energy.
3. *Emotional rest*, as in withdrawal from the affairs and excitants of daily life that draw upon our nerve energies.
4. *Mental rest*, as in eschewing those affairs that demand our attention and thoughts.

   Essentially, rest is the curtailment of energy expenditure and waste generation. This permits the body to redirect energies to cleansing and restoration.

2.1 Relaxation as Rest

To relax means to cease or decrease exertion. The word has broad connotations, and recreation or play might be called relaxation. Generally, relaxation means to let go of that which stresses the body and to undertake a course that does not tense or stress. Relaxation is a variant form of rest.

2.2 Only the Body Needs Rest

The cells of the body require rest but not necessarily sleep, but the brain and nervous system sleep. Cells require periodic rest so that they may cope with their eliminative and restorative functions.

2.3 Rest is Incidental to Sleep for the Most Part

Many people are apt to confuse the words rest and sleep as being synonymous. Rest, as we have seen; means cessation of activity. Sleep necessarily implies rest due to the immobilization of the body, but the condition of sleep exists only when consciousness has ceased. However, we should note that not all forms of unconsciousness are sleep. Coma, catalepsy and stupor must not be confused with sleep.

3. What Is Sleep?

Our foremost sleep scientists have not settled upon an answer to this question. Obviously sleep is loss of consciousness. But what more is there to it? Why should awareness cease? Does not the brain conduct millions of processes continuously even though it has lapsed into unconsciousness?

Sleep scientists have several theories about what sleep is: One is that the neurons become fatigued and simply lower their activities below the level required for consciousness. Another is that the brain inhibits

the reticular activating system.

Another theory is that the brain and nervous system operate on nerve energy, a form of electricity. The body, like an electric car, needs to be recharged at night. Sleep is a partial shutdown for recharging.

3.1 Why Should We Sleep At All?

Dr. Nathaniel L. Kleitman of the University of Chicago has concluded that the body generates nerve energy during sleep and that we sleep for this purpose. All other writers and researchers observe and attest to the restorative powers of sleep but do not suggest the physiological basis for these powers.

Among the texts you have is *Better Sleep for a Better Life*. This book details man particulars on the whyfore and conditions of sleep. We shall not repeat them here. We sleep because the brain requires, we may presume, a state of unconsciousness for the regeneration of nervous energy.

3.2 The Purpose of Sleep

Experiments with electrosleep indicate that the body generates low-level electricity during sleep. So far, researchers have not discovered where the body stores its electricity.

The primary purpose of sleep seems to be the generation of nerve energy. That seems to be the only reasonable explanation, for most researchers agree that sleep is a restorative. The vitality of the organism is restored under the condition of sleep.

Guyton's *Textbook of Medical Physiology* takes the position that sleep occurs because of neuronal fatigue. He says that, when one of the millions of parallel neurons in the feedback circuits falls out of activity, the lowered level of excitability of other neurons starts a chain of depressed activity that results in sleep. More particularly, wakefulness is attributed to the excitability of the reticular activating system, which is, a network of neurons, and sleep is attributed to lack of excitability.

Perhaps this does chronicle the mechanism of sleep, but other passages in the same physiology text appear to negate this position. Nerves or neurons perform twenty-four hours daily, just as the heart muscles. They need no rest or sleep. Only a certain part of the brain needs sleep, for the brain and nervous system continue to conduct millions of processes under the condition of sleep.

It appears that the faculty of wakefulness must cease in sleep and that neurons are only partially inactivated. Moreover, it is known that the brain is active during sleep except for those areas of the brain involved with consciousness. Some body processes are conducted more vigorously in sleep than in wakefulness.

Guyton is unable to explain what causes fatigue in neurons since, in theory, they are not subject to fatigue. He says: "We still need to explain the cause of fatigue of neurons after 16 hours of wakefulness and their recovery of excitability after 8 hours of sleep." Perhaps the depletion of nerve energy causes fatigue in neurons.

Sleep is primarily for the purpose of generating nerve energy or low-level electricity. Many other beneficial purposes are also served during sleep. The physiological rest obtained during sleep is extraordinarily valuable. During the prolonged rest of sleep, the body restocks its cells and organs with fuel, replaces cells that have lost their vitality and rids itself of extraordinary toxins that may have been uneliminated the previous day. Thus, the value of sleep is manifold.

The benefits of sleep may be chronicled as follows:

1. The regeneration of nerve energy;
2. Refueling the liver and cells with glycogen;
3. Destruction of old cells and replacement with new cells (Multiplication of cells occurs during sleep at a rate of more than twice that during waking hours); and
4. The body expels more debris and wastes during sleep and rest than when active.

Undoubtedly there are other benefits of sleep, but these ire the salient ones. For instance, the body uses less nerve 'energy and generates less waste when asleep.

3.3 Sleep As an Essential of Life

We can accept sleep as being absolutely necessary without question. But, as well, getting enough sleep is an essential of life. It is impossible for a healthy person to oversleep but undersleeping is an evil of our, times—a transgression most of us commit against ourselves.

When we undersleep, not enough nerve energy is generated to meet needs. We use more nerve energy when we are awake longer and generate less with less sleep, other conditions being equal. When our nerve energy is squandered to meet excessive consciously-directed activities, then nerve energy for unconscious body activities is not available. This may mean poorer digestion, impaired elimination and so on—the body must suffer generally.

With adequate sleep enough nerve energy is generated to meet our normal needs. The question of what constitutes adequate sleep and how to best obtain it is very important. The book, *Better Sleep for a Better Life* treats this subject in depth. In this lesson we'll endeavor to explore other materials to reinforce the wealth of observations in that book.

3.4 Some Current Views of Sleep

To be sure, the views offered on sleep in texts and books are few and mostly noncommittal to any stance or position. What scientists really know about sleep amounts to very little, and their views or theories are rather timid.

A view of sleep that is interesting is expressed in *The Complete Book of Sleep* by Diane Hales, a sleep researcher who has haunted many sleep laboratories looking for revelations on the subject. Her observation about sleep is instructive: "We think of sleep as being passive and uniform, but it actually consists of cycles of complex activity. We think our bodies and brains rest during sleep, but in fact our muscles tense, our pulse, temperature and blood pressure rise and fall; we are sexually aroused; our senses evoke a world of sights and sounds. We think that in sleep we shed our fears and feelings, but our personalities set our sleep patterns, and our sleep shapes how we feel and act. We accept sleep as commonplace, yet when we cannot sleep, we yearn for it more fiercely than for the rarest treasure. We are able to go without food or water or companionship more easily than without sleep."

On the all-important question of what sleep is or why we sleep, Ms. Hales is silent, though the book asks these very questions. One speculation ventured is that nature instituted sleep to keep animals quiescent during darkness so as not to injure themselves; so as to survive the perils of darkness. But a most compelling observation is made by Dr. Allen Rechtschaffen of the University of Chicago. He poses the question: "If sleep doesn't serve an absolutely vital function, then it's the biggest mistake the evolutionary process ever made. How could sleep have remained virtually unchanged as a monstrously useless, maladaptive vestige throughout the whole of mammalian evolution while selection has, during the same period of time, been able to achieve all kinds of delicate finely tuned adjustments in the shape of fingers and toes?"

What a good question! To ask the question is to acknowledge that nature does not err and has definite purposes in developing our faculties.

Other observations made by Ms. Hales are worth noting: "But if there is a timeless need for sleep, what is it?

This question remains one of the most perplexing biological riddles. Aristotle thought that we sleep because of cooling of the vapors of the head. Freud thought sleep was a symbolic journey back to the security of the womb. Pavlov thought of it as a conditioned response. Others have argued that we sleep to repair the ravages of the day, or the purge our brains of extraneous information, or to conserve our

energy. Sleep may be maintenance time for our bodies or a sort of dress rehearsal for our brains.

"Perhaps none of these explanations is correct. Perhaps they all are, for it may well be that sleep—like waking—has many functions. We may be making an enormous and costly mistake by assuming that our nights are any less significant or complex than our days," says Ms. Hales.

I have previously cited Dr. Arthur C. Guyton's text on sleep. Two theories he presents about the mechanism of sleep are worth reviewing. These theories relate to the physiology of going to sleep.

"The first belief is that sleep is a passive process, occurring when the neuronal mechanisms that cause wakefulness become fatigued and therefore succeed to a lower level of activity. The second theory is that active centers in the brain transmit signals into the reticular activating system to inhibit it and thereby produce sleep."

The primary difference between the two theories is that one assumes that the usual slow wave sleep (delta sleep) results from decreased excitability of the reticular activating system due to fatigue, while the other holds that sleep results from active inhibition.

While Dr. Guyton favors the first of these theories, your instructor favors the second. The brain actively seeks sleep when its nerve energy falls below a certain level.

Another theory of sleep holds that we sleep in order to have dreams, so that our "mental mix" may be sorted out. Cited in support of this theory is the gravely ill effects resulting from denial of REM (rapid eye movement) sleep, that stage of sleep during which dreams are conducted. After a few days without REM sleep, test subjects were depressed, less alert, garrulous and unable to concentrate. In short, they suffered many of the same effects as if they had suffered a big deficit in their "sleep account."

Simply stated, the brain sleeps in order to regenerate a fund of nerve energy. Nerve energy is the "money of account" for human vitality.

4. What Determines The Quality And Quantity Of Sleep We Need?

The amount of sleep that a person needs varies according to the individual's body and his or her sleeping conditions. Some people fare nicely on five or six hours of sleep daily, while others require eight or nine hours daily. Why the difference? Sleep needs vary with every individual and every circumstance. People sleep more in winter than in summer! Why should that be so? Mental workers sleep more than physical workers! What causes that? People who work and sleep outdoors get by with one to two hours sleep less than those who work equally arduously indoors and sleep indoors. Why? To answer the above questions, one must understand the intricacies of nerve energy expenditure and the conditions that enable the body to most efficiently regenerate it.

4.1 Conditions That Promote Efficient Sleep

The most efficient sleep is termed sound sleep, slow-wave sleep; delta sleep, stage four sleep or deep sleep. Deep sleep produces about twice the amount of recuperation as does lighter stages of sleep.

Since most Americans are toxic, it is doubtful that sleep researchers have examined the sleep of very many truly healthy people. The data the researchers have charted as normal really reflects the average of unhealthy people.

Truly healthy people sleeping under ideal conditions require less sleep than less healthy individuals. This is due to several factors. Firstly, a healthy person needs less recuperation due to less energy

expenditure. Secondly, a healthy person is capable of a greater proportion of very sound sleep because of less internal body disturbance. Thirdly, a healthy individual can regenerate nerve energy faster due to the increased efficiency of the person's faculties.

The ideal conditions of sleep are determined by both internal and external circumstances. The more comfortable the sleeper, the sounder their sleep will be. Pure air occasions less sleep and quiet surroundings promote deeper sleep. Also, the less light in the sleeping area, the less disturbed will be the sleep.

4.2 Conditions That Interfere With Sleep

Certain internal conditions favor or disfavor sleep. A person with a toxin-free body sleeps more readily and more soundly than a toxin-laden individual. For example, insomnia will often result from drinking coffee. The distress and stimulation from the caffeine may inhibit sleep, especially sound sleep. The body must expend energy in expelling the caffeine. At the same time, it generates less nerve energy because of lack of sound sleep.

Another condition that interferes with sleep is eating at bedtime. The primary reason for sleep is to regenerate nerve energy. However, if a person eats before sleeping, his/her body will direct much of its energies towards the digestion of the food. Since the brain is involved in digestion, less sound sleep will result. Additionally, the body will suffer a deficit of nerve energy because less was regenerated during the digestive process than would have been if the food had not been eaten.

Anything that is in the sleeper's environment or body that disturbs the senses or uses more nerve energy than normal interferes with sleep, thus making it less efficient and effective.

The book *Better Sleep for a Better Life* details specific conditions that interfere with sleep.

4.3 Fresh Air and Sleep

Those who sleep in fresh air invariably report better sleep and a lesser need for sleep than those who sleep inside their homes. Why should this be so? Stated very simply, any improvement in sleeping conditions improves sleep. When a person sleeps in fresh air, the body receives its oxygen needs in a relatively pure state. Air inside homes is likely to have less oxygen and more pollution than fresh air. Impure air furnishes less of our needs and gives the body more problems than does fresh air.

It is very beneficial to sleep by open windows in a quiet environment so that fresh air flows freely during sleep. If the environment is noisy, it is wise to have the house ventilated so that fresh air is continuously funneled to and through the bedroom. Even polluted air from the outside is better than stale air trapped indoors. Sleeping is also improved by working in a fresh air environment during the day.

4.4 Exercise and Sleep

Exercise is a blessing that we should indulge regularly. Optimally, we should exercise daily, but certainly not less than four times weekly. Performed as much as possible within our limitations, exercise confers only benefits and no liabilities. Exercise in the form of jogging, calisthenics, gardening, bicycling, swimming, brisk walking, etc., up to about half an hour daily, takes no time from our waking moments! Sleep needs are reduced by about that amount!

Exercise "fine-tunes" the organism. Elimination is so accelerated by exercise that extraordinary body cleansing occurs. The body not only eliminates extra carbon dioxide generated during vigorous exercise, but it also occasions the removal of accumulated toxins ingested from nonfoods and drugs and toxins created as a result of overeating, eating wrong combinations, eating under stress, etc.

A pure, less toxic body needs less nerve energy. Less expenditure of nerve energy means less nerve energy need be generated, hence less sleep is required by a person who exercises regularly.

4.5 Eating Practices and Sleep

Foods that require less digestive and assimilative energy use less nerve energy. Foods that are associated with toxic materials, such as cooked foods, condiments, additives, etc., give the body eliminative problems. Eliminative problems require a great deal of nerve energy to be properly dealt with. For example, a single bout with alcohol can exhaust the body for a day or two. The need for sleep is greatly increased so that the body may recuperate its energy.

Here are some salient principles you should keep in mind relative to diet and sleep requirements:

1. The more wholesome the food, the less nerve energy is required to digest and use it. Wholesome food lessens sleep needs and increases sleep efficiency.
2. The more unfit the foods eaten, the more nerve energy is expended and the more sleep is required. Moreover, sleep will be less efficient when unwholesome foods are consumed.

Fasting individuals require only three to five hours of sleep daily after fasting for a short time. People who eat meat, condiments and cooked foods and who overeat require inordinare amounts of sleep. Despite the extra sleep, they are usually not well rested because they have a perpetual deficit of nerve energy due to their unwholesome practices.

You should not eat for at least two hours prior to bedtime. Though meals do sometimes occasion drowsiness and sluggishness, due to the redirection of blood supply to the digestive organs, we should not expect to sleep well while the body is conducting digestive and assimilative tasks.

Eating beyond the body's need imposes an enervating task upon the body. Processing and disposing of food requires a great deal of energy. Improper combinations or unwholesome foods usually end up in a pathogenic mess that drains the body's resources in eliminative efforts. This drain of energy results in poor sleep and in a correspondingly greater need for sleep. An enervated individual who sleeps 12 hours daily may be less rested than a healthy person who gets only six hours!

4.6 Relaxation and Sleep

Relaxation is a great prelude to sleep. In a relaxed state, we drop the cares of the world and let go. Also, muscular tensions are released. When we take it easy and let go of tension, the body redirects its energies to its most needed tasks.

The cares of the world may be difficult to drop. I personally find it easy to let go of them by doing a few words on a crossword puzzle, solving a few chess problems or by pursuing some other consuming interest. Then I lay down, close my eyes and let myself go limp as if I were a bag of sand.

Somnolence comes quickly when the need for sleep exists and the demands upon the brain have been lowered as much as possible. Tensions, worries and stresses increase the need for sleep while simultaneously making it more difficult to fall asleep.

Many excellent relaxation methods can be practiced with benefit. One method that does not help you fall asleep so much as it helps you perform everyday activities in a relaxed and efficient manner is the Alexander Technique. There are instructors in many major cities.

People who are tense and who have trouble falling asleep or staying asleep, besides improving their diet and getting more exercise and fresh air, should search for and find a relaxation method that will help them.

4.7 Bedding and Sleep

In America, bedding usually consists of an innerspring mattress over box springs, sheets, a pillow with pillow case and blankets and/or quilts.

For body comfort, the softer the mattress, the better. Of equal benefit is airiness. A soft innerspring

mattress meets these conditions ideally. A thin cotton mattress on top of a foam, air or waterbed mattress works well too. The body is disturbed by pressure points, hot spots, cold areas and areas deprived of air. The body, like the lungs, will suffocate without fresh air. While the skin requires only a fraction of the air required by the lungs, it requires it nevertheless. Plastic materials deny the body air.

Body exudates then collect and irritate the skin, thus causing a lighter stage of sleep and frequent body shifting to overcome the discomfort.

Fabrics that breathe, such as cotton, solve this problem. Sleep should be conducted on cotton surfaces with lots of circulation underneath. Cotton sheets, blankets or materials should be used for cover.

Sleep is more efficiently conducted when the body is comfortable in temperature and when it is physically at ease. If the air temperature is warm, nude sleeping is ideal. Indoors, a fan may prove valuable if the air is very warm. If the temperature is in the sixty- to seventy-degree range, light-weight cotton pajamas or nightgowns will permit the warmer air radiating from your body to rise through the coverings into the cooler air outside the covers. Thus circulation is assured.

Perhaps you know that sleeping on concrete would provide very few contact points between the body and the concrete. The body's weight would rest on these points, thus creating pressure points that interfere with blood circulation and skin respiration. Distress of the areas in contact would soon occur and thus rouse the brain into a lighter stage of sleep in order to conduct a body movement.

On the other hand, a very soft bed permits the underside of the body to make rather even contact with the sleeping surface. Optimal air circulation can occur on the underside if cotton is underneath, and body weight is evenly distributed so as to cause no uncomfortable pressure points.

In nursing homes and hospitals, very hard beds are used. This is in keeping with the current medical philosophy. Bed sores frequently occur, with resulting "infection." Rather than "infection," what really happens is that oxygen-starved cells and tissues that are under constant pressure die and suppurate due to decomposition. No one should be confined to bed all the time. Daily fresh air and sunshine on the body is of inestimable importance. Neither should the body lay on hard or overly firm surfaces.

To sum up, bedding should permit optimal air flow and maintain an even, comfortable body temperature and even distribution of body weight over the underside.

5. The Value Of Napping

For many reasons, our night's sleep may be inadequate. Our daily activities may involve an extraordinary amount of stress that squanders nerve energy. Heavy body toxicity may unduly drain the body of nerve energy. When any of these conditions render us drowsy, sleepy, listless or "down," we need a nap. Many people resort to stimulating drinks (coffee, tea, colas) or foods (nonfoods such as chocolate, toxic foods such as meat, etc.) to "perk" them up. Stimulants of these kinds only exacerbate the problem rather than solving it. They further drain nerve energy even though the drain may not be evident at the time.

A nap of from a few minutes to an hour not only rests the body, but it also permits the brain to substantially renew its fund of nerve energy. In many countries around the world, the siesta is a normal practice. A one- or two-hour nap after midday refreshes people in many parts of the world. This napping practice contributes to their health and well-being.

It is said that a half-hour nap during the day is worth a whole hour of sleep at night. There is truth in

this. Further, it is better to take an hour for a nap and perform efficiently in the afternoon and evening hours rather than forego a needed nap and drag through the whole afternoon. The added efficiency more than offsets the extra time applied when one is not alert or is not feeling good.

The noon nap originated in prehistoric antiquity. Among the ancient Greeks, the first meal of the day was ordinarily of fruits. This meal was followed by a period of sleep—a nap. When rest and sleep are taken during the heat of the day, the meal is better utilized and the body is renewed. Animals in nature also observe "siesta" during the heat of the day.

The healthful custom of taking a nap after noontide has been largely destroyed by the needs of industrial society. This loss has, to a great extent, contributed to our ill health and stimulative habits that make industrial nations so highly stressed and diseased.

6. Dreams And Their Role In Sleep

Why do we dream? What physiological purposes are served by dreams?

Many students of the subject have ventured explanations. Sigmund Freud has, in the last century, described dreams as "the. guardians of sleep." This author favors that view.

6.1 Dreams As Guardians of Sleep

The dream stage is called REM sleep. This denotes a period of time during which there are rapid eye movements. These periods always occur after a period of deeper sleep. They last from a few brief moments up to half an hour. Dreams usually occur in 90-minute cycles throughout the night. However, some cycles are devoid of dreams, especially at the beginning of the night if the sleeper is very exhausted. Later, 90-minute cycles usually have the REM stage or a stage of dreaming.

Cited in the book *Better Sleep for a Better Life* are cases of only delta wave sleep on a fluidized air bed. Dreams did not occur and sleeping time was cut in half. This is very instructive in view of the many theories afloat about the purposes of sleep and the necessity of REM sleep or dreaming to insure our well-being.

Dreams are said to be necessary for "sorting out and classifying" the previous day's impressions or data input. They are said to be analogous to the rezeroing of an analog computer in preparation for new problems and input.

Study and reflection upon the whyfore of dreams have led me to believe that they serve a valid physiological role. We note that, under ordinary sleeping conditions, the body has a 90-minute sleeping cycle. However, this cycle is nonexistent when sleep is most efficiently conducted, and extraordinarily tired people may fuse the cycles at the beginning of the night. This would seem to indicate the nonnecessity of dreams where sleep conditions favor the objectives of sleep. Dreams seem to be a tool the body uses when sleep is still needed but is threatened.

For example, when we have a full bladder during the night, we may, prior to wakening, have a dream during which, vicariously, we urinate. The dream has supplied ersatz satisfaction to the urge and thus preserved sleep. However, this may only delay the inevitable. But the purpose o prolonging sleep has been served. Dreams of eating, drinking, defecating and discharging other body urges are commonplace. Especially common are dreams of sexual fulfillment.

It is reasonable to conjecture that parts of the brain that are aroused by stimuli are quieted by vicarious fulfillment through dreaming.

6.2 Dreams as Tranquilizers of the Mind

In guarding against premature wakefulness, dreams also often tranquilize or becalm the mind. Consider the following, example: Dave had been trying to solve a problem during the day, and he was rather intense and involved with it. His brain had become very involved with the problem, and the impulses to solve it arose again and again, even during his sleep. When these impulses become strong enough to interfere with sleep, his mind "artificially" supplied an answer to allay the impulses and thus preserve sleep.

I have solved problems during sleep too often to recount. However, most of the solutions have proven impractical! It is the rare dream that supplies an answer that is applicable to the problem that besets us. Nevertheless, even a wrong solution is sometimes helpful in giving insights and setting the stage for a solution.

To conduct the processes of sleep for most efficient regeneration of nerve energy, dreams appear to be mechanisms the body uses for calming the mind when problems and other stimuli would otherwise disturb sleep.

7. Establishing Conditions Most Favorable For Sleep

So far we have been discussing the various conditions favorable to sleep, as well as those that interfere with sleep. One of the foremost prerequisites for sleep is that we be sleepy. As obvious as this is, many people try to sleep when they are not sleepy! We should drink when thirsty, eat when hungry, defecate and urinate upon urge and, likewise, sleep when sleepy.

In a nutshell, we should have our "nest" so prepared that it optimally furnishes the conditions for the soundest sleep. Among other conditions, this means:

1. Sleeping quarters should be noise-free! Noise disturbs sleep. If noises cannot be eliminated, the steady hum or drone of a fan or other machine may mask them.
2. Sleeping quarters should be as dark as possible. Light stimulates the eyes and disturbs sleep. Light of any intensity at all makes sleep less efficient.
3. As discussed in the section about bedding, all the requisites for body comfort should be provided for.
4. Our stomach should be relatively empty. Digestive processes detract from the soundest sleep. We should not have a heavy load of food within when retiring, either juicy or concentrated. Can you imagine what eating several pounds of watermelon before retiring would do to your sleep? Obviously your sleep would be disturbed by several visits to the bathroom during the night.
5. If excited by a movie, a discussion, TV or anything else, do not attempt sleep. Rather, get into some rather passive pursuit such as reading that will bring on the somnolent urge while the emotional condition is allayed.
6. Many individuals cannot sleep alone because they are so accustomed to sleeping with a mate. Sleeping with another represents a certain security and assurance.

   On the other hand, sleeping with another has its liabilities. The movements and noises of the

sleeping mate may disturb sleep. If this is the case, an extra bed should be utilized.

The conditions for favorable sleep are more elaborately presented in the booklet, *Better Sleep for a Better Life*.

8. Sleep Problems In Adults And Their Solutions

Though it seems wise to title an entry as above, it is really superfluous to list the solution to sleep problems when they are, as a rule, no different than other disease problems. Most sleep problems arise from violating the conditions favorable to sleep that you have been studying and from violations of life's laws. Thus, the solution to sleep problems is really the same as it is for other diseases that arise from the same violations.

8.1 Insomnia

Insomnia is an inability to sleep. Obviously, this interferes with the body's ability to recoup the nerve energy it needs for the following day's activities.

If an individual complains about an inability to sleep and that he or she is not well-rested, the person is suffering from insomnia. Many physicians have noted that insomniacs really do sleep but don't realize it. Although this is true, many sleep specialists are now discovering that insomniacs' sleep is very low grade and is not very restful. Moreover, it may be punctuated by periods of wakefulness. Most insomniacs are not wrong about their problem existing. Too many physicians dismiss the patient's problem and prescribe sleeping pills or tranquilizers which ultimately make the problem worse by adding to the body's toxic load.

Rather than immediately searching for methods to induce sleep, you should first look for the causes of the problem. Insomnia results when an individual is assaulted by too much stimuli. Stimuli can result from improper sleeping conditions, but are usually due to body toxicity. This toxicity results from both autogenous sources and from ingested materials. Drugs and drug-like substances are foremost offenders. These include caffeine, condiments, chocolate, soft drinks, cooked foods, wrong foods, over-the-counter and prescription drugs, etc. The solution to insomnia is simple: Discontinue causes! Remove the conditions that interfere with sleep, and implement the conditions that promote it.

Insomnia is usually overcome in a few days during a fast and will not recur if a regime of healthful practices is adopted. A good night's sleep can be had by almost anyone who discontinues body-disturbing practices and institutes healthful practices.

8.2 Apnea

A is a prefix meaning against or without and pnea means breath. Hence, apnea is a condition of being without breath.

During sleep many individuals will miss one or more breaths—they simply stop breathing momentarily. This stoppage of breath usually lasts only a few seconds, but it can last a minute or two in some individuals. The fact that the breath stops at all indicates a less than normal body condition. The longer the period of breathlessness, the more pathological the body's condition. This condition may occur dozens of times during a night in sufferers.

Apnea may occur because the brain is not issuing the proper commands to the lungs and body mechanisms to inhale and exhale. In the case of sufferers from multiple sclerosis, these signals may be misdirected. Or, apnea may be caused by growths or abnormal obstructions. Where these conditions occur, a choking sensation quickly alerts the brain and often awakens the sleeper. Apnea interferes with sleep and may be a significant factor in insomnia. If frequent breathlessness occurs, the body sounds its alarms. The sleeper must be brought to a phase of lighter sleep, even wakefulness, to restart breathing. Fasting and healthful living almost always restore the body to normalcy, thus overcoming apnea.

8.3 Snoring

Snoring is not normal! A multitude of conditions can be responsible for snoring. Enlarged tonsils or adenoids may block the air passage sufficiently to cause the loud "flutter" of snoring. Most snoring occurs because the soft palate, when relaxed, flutters in the diverted current of air. Diverted air may be due to growths, fatty tissue in the throat, nasal deformities or other swelling.

Most fasting people who have previously snored are surprised when the condition disappears. The condition does, however, speedily return if the person returns to its causes. But many have overcome it permanently.

Flabby muscles or fatty growths may cause the condition. Fasting usually causes autolysis of the fatty tissue. A vigorous exercise program that includes head exercises sometimes corrects the condition.

Snoring is almost always present in those who suffer apnea although most snorers do not suffer apnea. The causes of snoring and apnea are sometimes one and the same, i.e., obstructions in the air passages. Solutions to snoring are rare but the surest is a healthful regime of living.

8.4 Narcolepsy

Narcolepsy is a "seizure of numbness." It is an uncontrollable urge to sleep that may come upon the sufferer without warning. Such a sudden urge to sleep may cause an accident or may disrupt activities, though usually the sufferer has enough warning to situate himself/herself harmlessly.

An urge to nap should not be confused with narcolepsy. Even in a healthy person, sleep can be induced if the person suffers a considerable sleep deficit.

Incorrect actions of body control mechanisms are eliminated when the modifying influences of drugs and body toxicity are discontinued and removed. Fasting and a healthful regime will provide the answer to these problems.

9. Sleep Problems In Infants And Children With Suggested Solutions

Sleep problems in children are extensive in our society. These include extended wakefulness, crying, abnormal demands for food, apnea, head-banging, nightmares and soon.

Almost all of these manifestations spring from an abnormal body condition begotten of, today's criminal treatment of children. To feed babies anything other than mother's milk is a tragedy. Freshly expressed fruit juices might be substituted for a feeding of mother's milk here and there, but even that is not advisable before six months of age. All other feeding is a disaster for the infant. Inoculating and drugging infants is criminal in every sense of the word. Feeding them starches, cooked foods, caffeine

and other such fare wrecks their delicate but vital faculties.

Formula-fed babies who are started on cereals within two months of birth, who are given cooked and condimented meats and other unfit foods and are drugged develop many pathologies. These manifest as the "usual childhood diseases" and as sleep problems.

An infant that does not feel right will not act "right." Abnormal behavior comes from abnormal conditions. Usually, a short fast will enable the child's body to cleanse itself. A proper regime of living that includes exercise (yes, even for an infant!), correct foods for the age, fresh air and sunshine, ample sleep, etc., will further improve the child's conditions.

10. Nostrums, Medications And Drugs Adminstered For Sleep Problems

Almost everyone has advice for insomniacs, including other insomniacs—but usually their advice just doesn't happen to work in their particular case! One of the latest fads is to take a heavy dose of the amino acid L-tryptophan before retiring. This fad came about as the result of an inquiry as to why drinking a glass of milk seemed to cause sleepiness in those who had sleep difficulties. However, milk is not heavy in this amino acid, hence there must be some other explanation as to why people become sleepy after drinking milk.

Anything that requires extra blood and nerve energy makes us drowsy, especially if taken at or near our regular sleep hour. Tryptophan itself is a fractionated product and as much as half an ounce will cause vomiting and diarrhea. The mechanism whereby sleep is hastened by a heavy dosage of tryptophan is probably from a drug effect, despite medical protestations that there are no side effects. The fact that a small amount of tryptophan will cause vomiting is indication enough that it does indeed cause drug effects.

The list of sleeping pills, tranquilizers, barbituates, aspirin compounds, antihistamines, antipsychotic and antidepressant compounds, chemicals and herbs supposed to induce sleep makes fearful reading. Perhaps we should add alcohol to this list, since it also seems to make people sleepy.

The truth is that drugs do not make us sleepy so much as they induce coma or a comatose state. Drugs bring us nearer to death, and there is little difference between the amount of these drugs needed to put us into a comatose state and the amount needed to produce death! Sleeping pills are all harmful. Natural sleep is the only sleep we should seek and we should pursue this by entering upon an /entirely natural regime of living.

Everything done to cause us to lose consciousness is unnatural. Unnatural responses to needs merely intensify problems instead of solving them. The treating professions prescribe drugs that ultimately make matters worse for the sufferer. Those who advise the use of herbs or special foods make the same mistake. Instead of advising the sufferer to discontinue those practices which cause insomnia, those who would "treat" the symptoms leave causes intact and tinker with modalities that cause drowsiness or coma.

There are over 50 million Americans with sleep problems, almost one in four. People who suffer insomnia usually have a number of other complaints as well. Sleeplessness is but one symptom of body toxicity. Remove the toxicity and all complaints disappear simultaneously. Fasting enables the body to free itself of toxic materials and a healthful regime will not impose toxin buildup.

11. Our Biological Clock And Sleep

Humans are diurnal creatures, that is, they conduct their conscious activities during the day. We are instinctively sleepers by night. The pattern of night/day sleeping continues even in subjects who are continuously kept in the dark for weeks at a time. The circadian rhythm is not disturbed by unceasing darkness. Experiments with subjects I kept in rooms without lighting for up to two weeks did not shake the rhythm, though subjects have had their rhythms lengthened and shortened while staying in caves lit with artificial daylight. The change in rhythm they experienced corresponded with the shortened or extended "days."

Our sleep patterns gradually change when we change time zones, or when normal activities are changed by advancing or regressing the clock.

12. Improving The IQ Through Sleep

Your intelligence quotient depends upon how efficiently and intensely the brain operates. It is well-known that caffeine will temporarily intensify and excite thinking until the letdown comes. Many stimulants will intensify mental activities. Good health will naturally intensify and enhance mental activities without providing a "letdown." Nothing in the world will sharpen mental acuity as will a few days to a few weeks of fasting. Mental acuity arises from two primary conditions:

1. The less toxins in the blood that flows through the brain, the better the brain is able to function.
2. The more nerve energy there is available, the more of it there is available to the brain for thought processes.

Hence, the more adequate our sleep, the more nerve energy we'll have for the brain and for more intense thought processes. When "you're sharper than a tack" your body is purer and your nerve energy greater than at other, mentally duller times.

Have a rejuvenating sleep!

13. Questions & Answers

Is oversleeping really bad for you? I hear a lot lately that too much sleep can make you sick.

> There is no such thing as oversleep. The body will not sleep beyond need. Consciousness returns when need has been met. We can't control that. However, we can by many devices shorten our sleep and simply refuse to get enough.

Sleep is a restorative agency, not a pathogenic practice, Medical men have said that fresh air is bad for you because it has been proven that city dwellers moving from polluted cities to vacation areas in fresh pure air get sick. Calling oversleeping pathogenic is similar to calling fresh air bad for you.

This attitude comes about because medical opinion regards disease as a war against the body by invading forces such as bacteria or viruses or both. Disease and sickness are not recognized as a body-instituted cleansing and repair process. When the body's vitality is increased by fresh air or by heightened nerve energy derived from sleep extraordinary to normal, the body uses the opportunity to start a healing crisis.

Rather than regarding sleep as an enemy of well-being, you should regard it as one way in which to more quickly help reestablish physiological normalcy. When in the relaxing and reassuring atmosphere of a fasting institution, many fasters start off by sleeping most of the time, sometimes for up to a week. When their bodies are sufficiently cleansed, they cannot sleep as much as is regarded normal. Note that in the case of heavy sleeping they could do so only because the body needed it to regenerate the increased nerve energy to restore normalcy. When normalcy has been reestablished, they find it impossible to get the amount of sleep they regard as normal. Thus we can see that oversleeping is myth, that the body will not, indeed, conduct the sleep process beyond need.

What's so great about napping?

I can do no better than quote from the illustrious longtime Hygienic professional, Dr. V. Virginia Vetrano. Here are her observations on the immense value of napping and of getting additional sleep when it is needed.

Napping is extremely important to every individual from birth to 140 years old. Taking a siesta after lunch improves digestion, absorption and assimilation and promotes better health through better nutrition. Taking naps prevents excessive fatigue and promotes better and more efficient work. Resting and napping actually increase our productivity. Taking a ten-minute rest break every hour helps us to get more done in less time. When one is fatigued, mental acuity and physical powers are greatly diminished. Resting, including napping, sharpens the mind and body. By napping and preventing excessive fatigue, we are less nervous and irritable at night and we can fall asleep more quickly. It has been shown that there are fewer marital problems in those people who rest after lunch than in those who must put in long days without an afternoon nap or rest period.

If you go to bed exhausted, the body must first recuperate before it can begin its anabolic processes, cell renovation, cell renewal, healing and repair. A rested person going to bed will be more fully recuperated in the morning. A person going to bed exhausted will wake up only half refreshed, and must face another day without relaxation, so he is never fully revitalized, repaired, or replenished. As a consequence, toxemia and disease ensue.

Learn to nap and learn to rest. Rest during your coffee break and part of your lunch break, instead of stimulating yourself with too much food and beverage. Rest again until refreshed, upon arriving home from work. Teach yourself to work in a relaxed state, free from all tension. You will notice a definite physical and mental improvement when you secure more rest and prevent fatigue.

You've said that sleep regenerates nerve energy. My biology book says sleep is for resting fatigued nerves that have been overwhelmed by toxin accumulation. It also says that the fatigue is caused

by the need to restore deranged body chemistry, that is, restore potassium/sodium balances. Do you agree with this?

I became a student of the sleep process in my early days as a Hygienist. I noted that, at first, I was sleeping so much that, even when working, my sleep was sometimes most of the day. Later, after a fast of 12 days I noticed that I was going to bed at a normal hour but waking four to five hours later and unable to sleep further. I tried to find out why and thus steeped myself upon the subject.

I do not regard nerves any more fatiguable than the heart, which is on duty for 24 hours daily. I regard the body as keeping its nervous system in better order than its heart for that is equally vital. Body processes are conducted 24 hours daily and if the nervous system fatigued and "conked out," this would obviously not be possible. The nerve restores its chemical normalcy after transmitting an electrical impulse in fractions of a second. It does not need eight hours in which to restore normalcy.

Toxin accumulation does not itself cause sleep. It does occasion a greater expenditure of nerve energy. A faster who has thoroughly cleansed his or her body will sleep three to five hours daily. But, as we know, a very toxic individual can drag around and deny needed sleep. Toxin accumulation would not cause sleep anyway but coma as in intoxication by alcohol or other drugs.

The body sleeps when its nerve energy reaches a critically low level. An ordinary battery will stop supplying sufficient spark to operate the auto's electrical system long before it is dead. Before normalcy is established, the battery must be recharged. This appears analogous to what occurs in the body!

You will note that I speak in these matters with a note of certainty and finality. After many years of researching the subject and reading all the researches and conclusions, you don't have to be a genius to see where the truth lies—it becomes as obvious as the nose on your face. It yells at you, quite literally. When you're following a wrong premise and give it power regardless of facts, you'll always arrive at a wrong conclusion. I definitely regard your biology book as wrong.

Why don't we get electrosleep devices if it supplies us with the nerve energy we need?

Russians, Israelis and even Americans have conducted extensive research on electrosleep. The published researches I've read have failed to give many specifics, though much can be inferred.

There can be little doubt that those subjected to electricity in millivolt ratings can derive from this source a supply of electricity to use as their own as if it were regenerated under the condition of sleep. Those who have obtained electrosleep seem to have been able to pursue normal activities for 22 hours out of 24. Keep in mind that normal activities drain us of nerve energy and that the extra five or six hours of activity daily uses extra nerve energy. That extra nerve energy, as well as that which is normally expended in a sixteen or seventeen hour day, must be supplied by the electrosleep. Electrosleep seemed to do this for the subjects, since when they were taken off electrosleep, they quickly became eight-hours-per-day sleepers again!

I could find nothing in these researches that would indicate what happens to humans when the routines of their normal circadian rhythm are altered by electrosleep. The question of value of electrosleep must be weighed carefully against any liabilities it might have. More

extensive studies into electrosleep must be made and published before its true value can be determined.

Does sexual indulgence really make us sleep more?

Yes, we need more sleep because of sexual activity. There is a great intensity of nerve energy expenditure in the sex act. Under normal circumstances the male will, quite literally, exhaust himself and will often collapse in sleep. The body gets quite a "high" during the sexual climax because it secretes narcotizing endorphins. The overall effect lowers nerve energy to such an extent that the body demands sleep almost immediately to restore the expenditure. Nothing can equal the sex act as a "sleeping potion!" Moreover, the regeneration of sperm in the male requires a great body expenditure of both resources and nerve energy. Those resources are of the finest materials obtainable from the body reserves and cells. The body gives its very best to the reproduction of the species. Nature has placed the survival of the species ahead of individual survival.

Isn't sex good for you?

Occasional sex indulgence is good for both the psyche and body faculties. Its frequent indulgence will, to put it in lay terms, "burn us out." Sexual activity draws upon nerve energies the body requires for its most vital activities. If sexual indulgence persists, the familiar syndromes of enervation, toxemia, irritation, inflammation, ulceration, etc. ensue. Prostate cancer can be a result of excessive sexual indulgence in men. So-called general diseases are due to accumulated body toxins as a result of venery.

Sex can be both good and bad for you. Keep in mind hat the conjugal act in animals occurs only when the female is in heat and only for the purpose of procreation. We have a culture that makes sexual activities an end in themselves. This practice may not be harmful if it is not overdone. It is very difficult to pronounce any standards upon these matters.

Doesn't sleep do the same thing as rest?

While the body rests during sleep it does lot, under the condition of rest only, accomplish what it does under the condition of sleep. Rest enables the body to catch up on its metabolic activities, whereas sleep is primarily for the purpose of nerve regeneration.

I've read Better Sleep for a Better Life. It was a revelation for me. Why don't scientists take note of it, especially its information about sleep being for regenerating nerve energy? I haven't read any other book that says this.

I have said previously that Dr. Nathaniel Kleitman has formulated the theory that sleep is for the regeneration of nerve energy. He may have found this idea in Hygiene. Dr. Shelton said fifty years earlier that sleep restores nerve energy. Perhaps Dr. Kleitman's findings were like those of the noted Uri Nicolayev of Russia, who fasted many schizophrenic patients with celebrated results. He was a student of Dr. Shelton's writings and merely applied them in practice. Insofar as Dr. Kleitman has taken note of the Hygienic position, science has recognized the role of sleep.

I've heard it said that dreams should be taken seriously because there is always some deepseated meaning in them. What are your thoughts about this?

Right off I'll tell you the best thing about dreams is that they don't come about in reality and have no overtones of significance. The only thing you should take serious about dreams is their role in saving the condition of sleep until it is more or less replete. Dreams are the

body's "lightning rod" that satiates vicariously disturbing impulses that arise in the body. Dreams "ground" the stimulating impulses that would normally prematurely return us to wakefulness.

Is it true that nightmares can be caused as a consequence of atrocious foods or upset stomach ? What causes nightmares?

Nightmares or terrors during sleep can arise from many impulses in the body including those generated by the distresses of a meal that cannot be digested but which gives problems instead. Fitful sleep results from poor body conditions such as in indigestion but also from aches, pains, inflammations and other body pathology. Nightmares may arise from fears that are not allayed during waking hours. Nightmares are nothing more than dreams that the body conducts to preserve sleep.

Do water beds give you the equivalent of an extra hour of sleep as most salesmen for them claim?

If air circulation and warmth are properly met, this statement is true. The water bed enables full body weight to be evenly distributed over the entire underside instead of at a few contact points as on floors and hard beds. This extra comfort disturbs the body less than when there are pressure points as in much conventional bedding. The body can more efficiently conduct the sleeping process due to fewer disturbing factors.

Article #1: How To Put Yourself To Sleep Easily By A.F. Willat

If you have difficulty going to sleep when you feel that you need it, and your brain is so active that you cannot stop thinking and it is keeping you awake, you can overcome the trouble by following in detail a certain routine of thinking positively. The reason you have this problem is because something important is on your mind at the time.

Some persons fall asleep easily because they do not take life so seriously and do not worry about other people and their troubles. They are not so "unselfish" and just accept life as it shows up. So, for those persons who are always concerned about others troubles, the following procedure will put you to sleep very easily.

When you are thoroughly convinced that you really need some sleep, all you have to do is to purposely mix up your thoughts so completely that you won't know what you were thinking about. It's that simple, and you need only put your mind on a simple, routine system of thinking which is so easy to follow that it becomes almost automatic to continue it after you have been interrupted by the interjection of unintentional and unrelated thoughts.

Before trying to follow this method, you should put your body in a natural, relaxed position with nothing to disturb your comfort. Lie directly on your back in a straight position and place your arms alongside your body so that the blood can flow freely. Then place your legs in a straight position to get rid of all the possible kinks and bends in all other parts of the body.

Put a pillow under the head, but not under the shoulders. Now, slowly take deep breaths so your lungs fill with air. Then exhale all the way to empty them completely. Inhale again to fill the lungs normally, and then try to inhale a little more after that. Exhale normally, and then try to exhale still more.

Your next step is to imagine walking over to a blackboard with imaginary chalk in your hand and slowly draw a vertical straight line from near the top to the bottom of the board. Do this several times more, as naturally as you can. Now, imagine that your are slowly drawing the figure two (2) extending the full height of the board. Do this a few times in your natural handwriting that you can be proud of. It must be done easily. Next, do the same with the other figures, 3, 4, 5, 6, 7, 8, 9, 10.

Any other routine system of mixing up your thoughts could be as effective, but this method has been used for a long time and is perfectly satisfactory.

If you do it very slowly, you'll probably be asleep before you know it, and when you wake up you won't remember what figure you drew last.

Doing the thinking rapidly will only keep you awake. Using ten seconds or more to draw each figure will stop your thinking, you'll become drowsy, and then lose consciousness entirely.

Even if you should wake up in the middle of the night, you will be able to put yourself back to sleep more easily than before.

You must never doubt your ability to have this routine plan work. Don't think about it. Just do it, and know that if you follow the directions correctly it will put you to sleep every time.

Rest: A Much-Neglected Health Factor By Hereward Carrington, Ph.D.

Some New Highlights On This Subject

A wise oriental once said: "He who can perceive inaction in action, and action in inaction, is wise among men."

It is during the hours of rest and sleep—when we seem to be most passive—that something within us is intensely active, recharging us with vital energy for the next day.

When we are active, we are expending energy; when we are seemingly inactive, we are receiving it. For "energy is always noted in its expenditure, never in its accumulation."

Animals instinctively know this. So do babies! As the Irishman once remarked, "They sleep a good deal of their waking day." We spend a third of our lives in sleep, and its remarkable recuperative effects are well-known. Have we not all had this experience? We are tired—fatigued. The head nods for only a few moments, and yet we feel refreshed, invigorated. Those few seconds have changed our whole outlook on life.

But it is not always necessary to sleep in order to obtain these beneficial results. Rest will revitalize us, too; but must be the right kind of rest. Complete relaxation with the eyes closed is a part of this formula —but only a part of it. There is a technique of rest, as there is for anything else. The best results are obtained only from the right kind of rest. How should one go about insuring this?

First of all, a few obvious essentials. The room in which we are attempting to rest should be as quiet as possible, and the light subdued. There should be a feeling of *certainty* that there will be no distraction and disturbances. The muscular system should be relaxed, and this may be accomplished by going over the body in thought, relaxing every part of it in turn as we come to it. (Deep breathing exercises will help in this.) Certain areas should receive particular attention, as they are points of tensions; the solar plexus, the back of the neck, the jaw, the throat, the shoulders. Go over the body several times in this way, relaxing each point in turn as you come to it.

Recent researches have shown that merely closing the eyes rests the brain and mind in a peculiar way. An electric rhythm starts as soon as the eyes are closed, and ceases immediately when they are opened. What the exact purpose and nature of this rhythm are, still remains to a great extent a mystery, but one might well imagine that they serve to clear "negative charges" from the brain. At all events they denote recuperation. The activity of the senses, and particularly the eyes, prevents this from occurring.

Fatigue is of two kinds: muscular fatigue and fatigue of the nerve cells. The former is easily overcome by a short period of rest; every athlete knows this. Exhaustion of the nerve cells, however, is another matter; this is deep-seated, and time is required to recharge the tiny "batteries." It is this lowering of energy in the nerve cells that leads TO physical and even mental trouble. Carried to an extreme, it leads to "nervous breakdown."

This life-energy of ours should be carefully conserved. When it is riotously expended it must be replenished. If not, we run into trouble. Overwork, sexual excesses and prolonged strain waste the energies. But more important than all these are the *emotions*. These are the factors which short-circuit the nervous system and exhaust its reserve energies the most quickly. Any amount of thinking will never tire us, *providing* emotions are not associated with these thoughts.

All strong emotions have this effect. It is well-known that fear, worry, anxiety, anger and similar powerful emotions will have this result, but so will intense excitement and foolish enthusiasm! Take a football game. The players become tired, but a brief period of rest refreshes them, and they are ready to "raise hell" that night. But the spectators are exhausted! High tension over too long a period has this effect. And it is the same in our everyday lives. As Dr. Trall once remarked, "A life cannot be both intensive and extensive." A relatively calm and peaceful life will insure longevity; and in the meantime will insure freedom from nervous depletion and breakdown.

All this does not mean that normal enthusiasms should not be indulged in, or that one should become a jellyfish, devoid of energetic thinking and acting. Provided destructive emotions are not present, these would represent merely a wholesome, healthy life. But, just as powerful feelings can drain the cell-energies rapidly, less powerful ones, sustained over long periods, will exhaust them slowly. Fears and worries particularly have this effect. So will frustrations, resentments and inner disharmonies. These will fight against one another and ultimately devitalize their host completely.

There is an old saying that a man can climb mountains all day and be relatively fresh at the end of it, whereas if he has to wash dishes for ten minutes he is exhausted! The reason for this, of course, is that in the first instance his whole being is working in unison, wheras in the latter case he is fighting against himself. His conscious mind forces him to perform the activity while his subconscious mind is resenting and resisting it. The result is that he is like two mules hitched to opposite ends of a rope, pulling against each other. Result: They get nowhere. But hitch them up in tandem, and they will pull you out of the rut. It is this internal emotional conflict which wears down the energy of the nerve cells and in time produces dire results.

No one should be ashamed of lying down for a few minutes some time during the day, closing the eyes and relaxing. This is especially true of elderly people. It rests the heart, equalizes the great blood-lake and restores the energy of the brain and nerve cells. More important still, it will prevent you from becoming fatigued. Towards the end of the day, "tiredness" seems to progress in almost geometrical ratio. That is why it is necessary to go to bed at a reasonable hour, if one has to get up early. If one is tired after sixteen hours, the seventeenth hour will fatigue you far more than one-sixteenth of the waking day, and the eighteenth hour still more, and so on. Those last two or three hours are often the ones which make all the difference between a normal life and one which is headed for ultimate physical and mental trouble.

Two other important factors should be noted in this connection. The first is that a complete change of mental interests will often act as a great reenergizer. Perhaps new areas in the brain are involved; more probably the conscious and subconscious mind are now working in harmony, rather than in opposition.

Whatever the cause, the fact remains that a man may be tired out at the end of a day's work, but as soon as he begins tinkering with his hobby he is no longer exhausted. Travel has much the same effect. A complete change of mental scenery will work wonders in the way of rejuvenation, as we all know.

The second essential for complete internal rest I have rarely seen mentioned anywhere—and yet it is highly important. The vital organs of the body need rest, too, just as our external muscles do. I refer particularly to the digestive organs. It is now generally acknowledged that we all eat far more than we need, in order to maintain the physical and vital wastes of the body. The amount of energy required to convert and digest this quantity of food must be prodigious, and this energy must be drawn from the general fund. A little judicious fasting will work wonders in restoring this vital expenditure. Many people are chronically tired for no other reason: they keep themselves constantly fatigued because of this internal overactivity of the digestive organs—even during the hours of sleep, when a "late supper" is indulged in. Giving these vital organs a rest is highly essential. The benefit to be derived from occcasional fasting or semi-fasting are attributable largely to this—the rest given the organs of digestion at such times. The rejuvenating effects of these periods of abstinence and self-discipline have been noted by many who have given them a fair trial. Doubtless you can do the same.

Rest—external and internal—is a fundamental requisite for a healthy, normal life. The human protoplasm needs rest. It must have it. Nothing else will take its place. The human heart beats approximately 100,000 times every day—every twenty-four hours—and yet (if not abused) it can continue to function in this way for eighty or a hundred years. Why? Because, between each beat, your heart rests. It is a momentary rest, it is true, but enough to permit its recuperation. Activity and relaxation should alternate. That is the law of life. Obey this law, and health, harmony and happiness should be yours!

Article #3: The Need For Rest By Dr. Herbert M. Shelton

The motto of the early Hygienists—"health by healthful living"—was comprehensive and included within its scope the whole way of life. It did not refer to a plan of eating or a system of exercise or to any other single facet of life. From the time of Graham forward, it was fully realized that every facet of life was as important as every other if one hoped to maintain good health. It was also understood that all the elemental needs of life had to be met in keeping with the needs and capacities of the sick organism if health was to be restored.

Among the important elements of a valid Hygiene was rest. Hygiene places great emphasis upon the importance of rest. Rest, in which is included sleep, is nature's great restorative process, just as activity and excitement constitutes her great exhaustive process. Activity is necessary to the highest expressions of organic life, but it must be alternated with periods of rest, or else the organism wears itself out.

In life, two simultaneous processes are in continuous operation. First, there are the processes of growth, development and replenishment; second, there are the processes of wear and tear. Collectively, these two processes constitute *metabolism*. To the process of wear and tear, the term catabolism is applied. *Catabolism* is dominant in periods of activity. *Anabolism* is the term applied to the process of replenishment, development and growth and is dominant during periods of rest and sleep. Neither of these processes is ever entirely passive during life, but, in general, it may be said that when one process is at the height of its activity, the other is at its lowest point of activity. *Anabolism* may be said to be the period in which the body renews itself, replenishes itself, refreshes itself and prepares itself for renewed

activity.

It will thus be seen that when we say rest is a cessation of activity, we mean only that it is a cessation of certain forms of activity. The *anabolic* processes are intensely active during periods of rest and sleep. In states of sedations, narcosis, drug-induced *hypnosis*, *anesthesia*, etc., when physical and mental activities are greatly reduced or almost suspended, *anabolic* activities are also greatly reduced or nearly suspended; hence it is that drug-induced inhibition of the activities of life does not result in refreshment and renewal of the body. These states leave the body depressed, languid and unfitted for further activity. Normal rest and sleep, on the other hand, produce alertness, freshness and a feeling of vigor and prepare one for further action. It may thus be seen how important rest and sleep are to the replenishing processes of life.

The infant and young child require much rest and sleep, perhaps primarily because the *anabolic* processes are at their greatest intensity. This is to say that in those periods of life when development and growth are greatest, *anabolism* is most intense; hence, much rest and sleep are required. The invalid also requires much rest and sleep, not primarily because anabolism is more intense in the body of the invalid, but because it is less efficient and requires a longer period of time in which to accomplish the same recuperation and renewal. It is a cardinal principle of Hygienic science that *nothing is remedial except those conditions which economize the expenditure of the forces of the organism*. Those invalids who vainly imagine that they can exercise themselves into vigor usually succeed only in wasting their already depleted stock and work so hard at getting well that they keep themselves enervated. There are times when the invalid needs exercise, but first of all and foremost in the ranks of his current needs, is rest.

We divide rest into four kinds: *physical rest*, which may be obtained by discontinuing physical activity, going to bed and relaxing; *sensory rest*, which is secured by quiet and by refraining from using the eyes; *mental rest*, which is secured by poising the mind, this is to say, by ceasing to worry and to fret and by the cultivation of mental equilibrium; and *physiological rest*, which may be obtained by reducing physiological activities. This last form of rest, may be best obtained by either greatly reducing the amount of food taken or by abstaining from food altogether.

When our primitive ancestors had performed a certain amount of work, they became tired and weak, even sleepy, and were thus forced to rest. By thus regularly and properly meeting the demands of their bodies from rest, they were reinvigorated and made, ready to resume their work. But a time came when man learned to force his body to continue activities after fatigue demanded a halt. He learned to lash his organism with *stimulants*. Without stimulation the brain grows weary and the physical demand for rest becomes so great that we lie down and rest and sleep. But to drive the body and mind with *stimulants* is to exhaust these. Activity, even strenuous activity, does not injure man so long as, by natural living, he possesses the power to work. When fatigue calls for rest, he will rest. Injury results when, by the use of *stimulants*, he forces himself to continue working after nature has demanded a cessation of work. If he lashes himself with *stimulants*, he will overtax himself and not rest when he should. We see a graphic illustration of this in the common coffee-break of today. A few minutes out from activity is provided the worker who, instead of taking advantage of the, opportunity to rest, fills up on stimulants and foodless cooked foods. The result is that the coffee-break, instead of proving a boon, becomes a bane.

To rest a whole day, when greatly fatigued, either of body or mind, is both agreeable and beneficial. A much longer period of rest is required by the invalid who perhaps, is greatly devitalized and much enervated from long indulgence and overactivity, excesses, *stimulation* and emotional excitement. These profoundly enervated individuals may require weeks or even months of rest before organs that have been lashed into impotency will rest into full functioning power.

Physiological rest, which is more commonly known as fasting, is best taken under competent supervision. This is especially true if the period of abstinence is to be a lengthy one. Most people may safely take a few days of fasting without expert supervision, but these frequently spoil the results of their fast by the overeating which they practice immediately thereafter. Indulgent individuals, who are lacking in self-control, should be supervised even during a short fast; otherwise, they are likely to receive but

small benefit from their period of abstinence.

The chronically tired, exhausted individual, seeking to rest, should retire to some quiet, secluded place, preferably in the country, where the air is pure and disturbances are at a minimum, and go to bed and relax. If he is not sick, he need not spend his whole time in bed; but if there is any marked ailment from which he seeks to recover, he should realize that the more nearly he can approach the immobilization of the embryonic period, the more rapid will be his recovery. He should abstain from all *stimulants*, both of a chemical and emotional nature. The noise and excitement of radio and television programs interfere with rest, with poise and with sleep, thus preventing recuperation and retarding recovery.

Our noisy civilization, which is growing more noisy day by day, is as great an evil as are air pollution and water pollution. If we could practically hibernate and effectively insulate ourselves against newspapers, magazines, television and radio and other sources of noise and excitement, we would refresh and replenish ourselves in a much shorter time and with greater efficiency.

Article #4: Rest vs. Stimulation by Dr. Herbert M. Shelton

For years I have stood out against the employment of all methods of artificial stimulation (irritation or excitation) of the body of the sick person because such methods tend to exhaust the energies of the patient. One of my critics says of this: "The loss of 'vital power' which seems to be a bogey man of Dr. Shelton is not so bad as he paints it. The body is not a static but a dynamic machine constantly regenerating and losing 'vital power' or energy." We may rant the truth of his statement that the body is a dynamic machine constantly generating and losing energy, without being compelled to grant his contention that it is helpful to waste, by stimulation, the energy of the body as it is generated.

The power of the body to generate energy is limited, the power of the sick body to generate energy is crippled, he sick person, and especially the chronically sick person, suffering from nervous fatigue as the result of a previous state of energy. He is not helped by any measure that further depletes his energy-stores. Stimulation is a forced draught upon the energies of the body. It compels the expenditure of energy, not in doing useful work, but in consisting the stimulant. If it is long continued or often repeated, exhaustion is the result. The depletion of the body's energies is commensurate with the amount of stimulation it is subjected to.

The opposite practice, that of conserving the patient's energies through rest, is a far more rational and an infinitely more successful practice. A workman returns home in the evening very tired from a hard day's toil. We do not prescribe a stimulant for him, but rest and sleep. A sick man comes to us with a tired organism after weeks, months, or even years of overwork, stimulation, dissipation, etc., and we pursue the opposite course. We tell him that he needs more stimulation, that his organs need to be made to work more. We begin a course of treatment that consists of stimulating the skin, the kidneys, the colon, the nervous system, etc. Sometimes, if le is not too badly depleted when he comes to us, we succeed in whipping up a short-lived simulation of health, very often, indeed it is the rule, we see our patient grow progressively worse from the first.

Danger of Stimulation

The very fact that a period of depression (a reaction), commensurate with the prior period of stimulation, follows every period of stimulation should reveal to us the true wasteful character of stimulation. If we

grant that anything is gained during the period of stimulation, we must see that this is lost in the reaction. The more we seem to gain the more we actually lose.

The stimulation afforded by any stimulant grows progressively less and the subsequent depression progressively greater as the use of the stimulant is continued. Stronger and more frequent doses or a new and different stimulant must be resorted to, and the period of recuperation must be longer.

Another serious objection to the stimulation practice is that it deals with effects only and tampers with the functions of the body and ignores the causes of the troubles present. It seeks to restore health by forcing increased action in the body, rather than by correcting or removing the causes of the disease.

Suppose we assume that we are dealing with a highly toxic patient and it is desirable to eliminate the accumulated toxins from his body. If we set out to do it by stimulating his organs of elimination, but ignore the cause of the toxic state, we would be in the same position as that of the man who attempts to dip a fountain dry without cutting off the water supply. He dips and dips until he is exhausted, only to find that there is as much water in the fountain as when he started. Indeed, if there were no other outlet for the water, the longer he dipped and the more tired he became, the faster would the water accumulate, for, as his fatigue increased, his dipping would fall off and the water would gain on him increasingly. In just the same way we whip up the organs of elimination to greater and greater effort and keep up the process until these organs and, perhaps, the whole organism are exhausted, only to find that the body is as toxic as ever. Indeed, due to the impairment of function that inevitably results from these stimulating measures, the body becomes increasingly more and more toxic.

The Importance of Rest

There is no more effective method of increasing elimination than that of rest. Increased activity increases the production of waste; decreased activity lessens the production of toxins. Increased activity expends energy; rest and sleep conserve energy. The more an organ is stimulated, the less able it becomes to perform its functions. Give it sufficient rest for recuperation, replenishment and repair and its vigor and functional efficiency are increased.

Much energy is consumed in physical activity. If rest is substituted for activity, the energy commonly spent in physical activity is available for use in doing other and, for the moment at least, more important work. Nature does not cut off the appetite, prostrate the patient and cut down mental activities, sexual activities and sensory activities, in typhoid, for instance, for nothing. These are all conservative measures—designed to conserve the energy commonly expended in these forms of activity, in order that it may be available for use in the, at present, more important work of recovery.

Rest Is Vitogenic

Activity consumes the substances of the body, is vitolytic; increased activity increases the consumption of body substance. During rest, the cells, the tissues and the organs are repaired, replenished and renewed. Rest is vitogenic. Resting organs are better able to repair their damaged structures than stimulated organs. Rest and sleep are the great representative restorative processes.

The actual storing up of the energy reserves or the energy sources of the body takes place during rest. Activity expends and rest recuperates the body's supplies. The stimulation (irritation and excitement) of an already depleted body only hastens the exhaustion of the few remaining energy-stores and brings on the final collapse sooner than it would have occurred otherwise. The more the body is stimulated, the sooner it reaches the state of complete collapse. The weaker the body is, the less able it is to withstand the "action" of stimulants—the greater is the necessity of "doing nothing" intelligently.

Only those who have had sufficient experience with both the stimulating (wasting) practice and the resting (conserving practice to enable them to judge the merits of the two practices are in a position to pass judgment upon them. Anyone who has not completely abandoned the stimulating practice and

employed only the conserving practice on hundreds of patients and over a period of years, and who, in the face of this lack of experimental knowledge of the practice, proclaims the superiority of the stimulating practice and employed only the conserving position as were the armchair philosophers of the pre-Baconian period—he simply does not know, and cannot know, what he is talking about; he is only spinning, spider-like, a fantastic theory out of the web of his fancies.